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Success rates at cervical catheterisation in a sonographer-led HyCoSy service: a retrospective baseline audit

Amanda Marland*, Gareth Bolton

Background	<p>HyCoSy (Hysterosalpingo-contrast sonography) is the investigation of choice for the evaluation of tubal patency as recommended by the National Institute for Health and Clinical Excellence (NICE) (2004)¹ – now the National Institute of Health and Care Excellence. Role extension and development in Ultrasound has led to sonographer-performed HyCoSy being undertaken in many UK centres in recent years. However, published audit surrounding sonographer-performed HyCoSy is limited. The aim of the study was to evaluate success/failure rates of cervical catheterisation in women referred for HyCoSy examinations in a sonographer-led service in a hospital setting and to explore the methods and techniques identified in the literature for improving success.</p>																																		
Method	<p>The retrospective audit was conducted in a hospital setting and each examination was performed by one of three sonographers. Referrals for HyCoSy were made in accordance with NICE guidelines and made by either a fertility nurse specialist, consultant or registrar in Obstetrics and Gynaecology. In a sample size of n=143, catheterisation was attempted in 92% (n=132) and abandoned prior to catheterisation in 8% (n=11). The HyCoSy examination was undertaken during the late follicular phase, prior to ovulation and up to day 14 of the menstrual cycle. All women referred for HyCoSy examination as part of subfertility investigations between January 2015 and January 2016 were included in the study. The use of a consecutive sampling method in this study allowed for the whole population (for one year) to be reviewed, as a means of reducing sampling error to an acceptable level².</p>																																		
Results and Discussion	<div><table><tr><th>Degree of difficulty</th><th>First catheterisation attempt (N)(%)</th><th>Second catheterisation attempt (N)(%)</th></tr><tr><td>None</td><td>71 (54%)</td><td>8 (44%)</td></tr><tr><td>Minor</td><td>13 (10%)</td><td>0</td></tr><tr><td>Major</td><td>10 (8%)</td><td>5 (28%)</td></tr><tr><td>Abandoned procedure</td><td>19 (14%)</td><td>4 (22%)</td></tr><tr><td>Missing data</td><td>19 (14%)</td><td>1 (6%)</td></tr></table><p>Table 1: Frequency of difficulties encountered at Catheterisation</p><table><tr><th>Comments:</th><th>Number of times the reported 'difficulty' was experienced by participants</th></tr><tr><td>Pain with speculum in situ</td><td>1</td></tr><tr><td>Unable to insert catheter beyond cervix</td><td>4</td></tr><tr><td>Previous cervical procedure</td><td>3</td></tr><tr><td>Catheter unstable</td><td>2</td></tr><tr><td>Pinhole cervical os</td><td>1</td></tr><tr><td>Retroverted uterus</td><td>1</td></tr><tr><td>Total</td><td>12</td></tr></table><p>Table 2: Free-text participant comments associated with experienced difficulty</p></div> <p>At audit, a failure rate of 14% was reported at first attempt of catheterisation. The failure rate was high when compared with a rate of 0% - 8% described in the literature. The reasons for apparent sonographer reluctance to pursue a difficult catheterisation attempt may be attributable to a number of factors: the need to avoid vasovagal reaction, strict adherence to the current procedure and time constraints. Catheterisation was successful at the first attempt in 86% (n=113) and failed in 14% (n=19). A second attempt of catheterisation was successful in 74% (n=14) and failed in 21% (n=4). First and second attempt successes combined; a successful HyCoSy examination was achieved in 96% (n=127). 32% (n=42) of first catheterisation attempts (including abandoned procedures) were considered difficult. 50% (n=9) of second attempts (including abandoned procedures) also reported difficulties. Difficulty was categorised as none, minor, major or resulting in an abandoned procedure (<i>see table 1</i>).</p>	Degree of difficulty	First catheterisation attempt (N)(%)	Second catheterisation attempt (N)(%)	None	71 (54%)	8 (44%)	Minor	13 (10%)	0	Major	10 (8%)	5 (28%)	Abandoned procedure	19 (14%)	4 (22%)	Missing data	19 (14%)	1 (6%)	Comments:	Number of times the reported 'difficulty' was experienced by participants	Pain with speculum in situ	1	Unable to insert catheter beyond cervix	4	Previous cervical procedure	3	Catheter unstable	2	Pinhole cervical os	1	Retroverted uterus	1	Total	12
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Conclusion	<p>Overall failure rates at cervical catheterisation were found to be acceptable when compared with the literature findings³. A second attempt was successful in most cases. First time failure rates were high, suggesting a need to improve these. Data analysis revealed few free-text practitioner comments associated with difficulty. Information regarding attempts made by sonographers to overcome difficulties was therefore limited. The difficulties encountered at cervical catheterisation are reported in the published literature and also in this study. Common problems include; uterine position, cervical complications and cervical spasm. Sonographers should consider the use of ultrasound for guidance purposes during catheter insertion in difficult cases. The usefulness of the baseline TV scan should not be overlooked.</p>																																		
Refs	<p>Refs</p> <p>1. NICE (2004) Fertility: assessment and treatment for people with fertility problems NICE Guidelines.</p> <p>2. Bowling A (2005) Quantitative Social Science: The Survey In: Bowling A and Ebrahim S (Eds) Handbook of Health Research Methods: Investigation, Measurement and Analysis Maidenhead: Open University Press.</p> <p>3. Moro F, Selvaggi L, Sagnella F, Morciano A, Martinez D, Gangale MF, Ciardulli A, Palla C, Uras ML, De Feo E, Boccia S, Tropea A, Lanzone A, Apa R (2012) Could antispasmodic drug reduce pain during hysterosalpingo-contrast sonography (HyCoSy) in infertile patients? A randomized double-blind trial <i>Ultrasound Obstet Gynecol</i> 39: 260-265 doi: 10.1002/uog.11089.</p>																																		

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